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Dominion®

MAR 1 6 2016

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Serial No. 16-066
MPS Lic./AV R0
Docket No. 50-423
License No. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
LICENSEE EVENT REPORT 2016-001-00
AUTOMATIC REACTOR TRIP ON REACTOR COOLANT SYSTEM LOW FLOW DUE TO LOSS OF 'B' REACTOR COOLANT PUMP

This letter forwards Licensee Event Report (LER) 2016-001-00 documenting an event that occurred at Millstone Power Station Unit 3, on January 25, 2016. This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in manual or automatic actuation of systems listed in 10 CFR 50.73(a)(2)(iv)(B), initially reported via event notification 51682 pursuant to 10 CFR 50.72 (b)(2)(iv)(B) and 10 CFR 50.72 (b)(3)(iv)(A).

If you have any questions or require additional information, please contact Mr. Thomas G. Cleary at (860) 444-4377.

Sincerely,

John R. Daugherty
Site Vice President – Millstone

Attachments: 1

Commitments made in this letter: None

IE22
NRR

cc: U.S. Nuclear Regulatory Commission
Region I
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King of Prussia, PA 19406-2713

R.V. Guzman
NRC Project Manager Millstone Unit 2 and 3
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NRC Senior Resident Inspector
Millstone Power Station

ATTACHMENT

LICENSEE EVENT REPORT 2016-001-00
AUTOMATIC REACTOR TRIP ON REACTOR COOLANT SYSTEM LOW FLOW DUE TO LOSS OF 'B' REACTOR COOLANT PUMP

MILLSTONE POWER STATION UNIT 3
DOMINION NUCLEAR CONNECTICUT, INC.

NRC FORM 366 (11-2015) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2018

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Millstone Power Station Unit 3	05000423	1 OF 3

4. TITLE

Automatic Reactor Trip on Reactor Coolant System Low Flow Due to Loss of 'B' Reactor Coolant Pump

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
01	25	2016	2016	001	00	03	16	2016		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
10. POWER LEVEL	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
100	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Thomas G. Cleary, Manager Nuclear Station Licensing	(860) 444-4377

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
	P	CAP	Westinghouse	No					

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO				

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On January 25, 2016 at 0147 hours an automatic reactor trip occurred at Millstone Power Station Unit 3 while the unit was in Mode 1, operating at 100 percent power due to a trip of the 'B' Reactor Coolant Pump. The 'B' Reactor Coolant Pump tripped on a ground fault, which in turn caused the Unit 3 reactor to trip on reactor coolant system low loop flow (Reactor Protection System actuation). All control rods fully inserted into the reactor. The auxiliary feedwater pumps started as designed on low steam generator level and operators maintained steam generator level. All other post trip actions were standard and all safety systems operated as expected.

The 'B' Reactor Coolant Pump trip was caused by failure of one of three motor capacitors on the Reactor Coolant Pump motor. The failed capacitor on the affected Reactor Coolant Pump motor was replaced and the integrity of the motor windings, cabling, breaker, and associated protective relays were verified. Based on an assessment of the event, the risk impact was determined to be very small. There were no radiological challenges and the health and safety of the public were not affected.

The actuation of the reactor protection system and the automatic start of the auxiliary feedwater pumps is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in manual or automatic actuation of systems listed in 10 CFR 50.73(a)(2)(iv)(B).

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Millstone Power Station Unit 3	05000423	2016	- 001	- 00	2 OF 3

NARRATIVE

1. EVENT DESCRIPTION:

On January 25, 2016 at 0147 hours an automatic reactor trip occurred at Millstone Power Station Unit 3 (MPS3) while the unit was in Mode 1, operating at 100 percent power. The Reactor Protection System (RPS) was initiated due to a reactor coolant system loop low flow. All control rods fully inserted into the reactor. The auxiliary feedwater pumps started as designed on low steam generator level and operators maintained steam generator level. All other post trip actions were standard and all safety systems operated as expected, stabilizing the plant.

The 'B' Reactor Coolant Pump (RCP) trip was caused by failure of one of three motor capacitors on the RCP motor. The failed capacitor on the affected RCP motor was replaced and the integrity of the motor windings, cabling, breaker, and associated protective relays were verified.

Based on an assessment of the event, the risk impact was determined to be very small. There were no radiological challenges and the health and safety of the public were not affected.

The actuation of the reactor protection system and the automatic start of the auxiliary feedwater pumps is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in manual or automatic actuation of systems listed in 10 CFR 50.73(a)(2)(iv)(B).

2. CAUSE:

The direct cause of the 'B' RCP trip, which resulted in an automatic reactor trip due to partial loss of forced reactor coolant flow, was due to the failure of one of the three RCP motor capacitors. Failure of the capacitor provided a short to ground.

3. ASSESSMENT OF SAFETY CONSEQUENCES:

Final Safety Analysis Review (FSAR) Section 15.3.1 presents an analysis of a Partial Loss of Forced Reactor Coolant Flow (one RCP). The analysis presented spans 10 seconds from the onset of the flow coast down to beyond the time of minimum Departure from Nucleate Boiling Ratio (3.6 seconds).

The event as presented in the FSAR contains conservative assumptions typical of safety analysis. These include rapid coast down characteristics, maximum trip delay times, most adverse time in cycle reactivity feedbacks, etc.

Plant computer data and log entries were examined to verify that the actual plant response was bounded with respect to that in the safety analysis. Examination of the plant response showed that the January 25th partial loss of forced reactor coolant flow due to the loss of 'B' RCP transient was well bounded by the FSAR analysis.

The event was considered uncomplicated as defined by the Reactor Oversight Process. In addition, all equipment designed to remove decay heat was available prior to the event and functioned properly during the event. The event was not a significant operational event. Therefore, the event posed no actual or potential hazard to public health and safety.

NARRATIVE

4. CORRECTIVE ACTION:

The failed motor capacitor was replaced on the 'B' RCP.

Additional corrective actions are being taken in accordance with the Millstone Corrective Action Program.

5. PREVIOUS OCCURRENCES:

Millstone Power Station Unit 3 has no previous occurrences.

6. Energy Industry Identification System (EIIS) codes:

- Reactor Coolant System – AB
- Pump – P
- Auxiliary Feedwater System – BA
- Steam Generator- SG
- Capacitor- CAP

7. MANUFACTURER/PART NUMBER

- Capacitor: Westinghouse/6060B7H01N